



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**POWER OF ATTORNEY WITH REVOCATION AND  
CHANGE OF CORRESPONDENCE ADDRESS**

I hereby revoke all previous powers of attorney or authorizations of agent given in the applications identified in Table A attached hereto, and appoint

☒ Practitioners at Customer Number: 34138



as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Please change the Correspondence Address for all applications identified in Table

A to:

☒ Practitioners at Customer Number: 34138

I am the:

☐ Applicant/Inventor.

☒ Assignee of record of the entire interest. (A statement under 37 CFR 3.73(b) is enclosed.)

Respectfully submitted,  
ISIS PHARMACEUTICALS, INC.

Date: 5-30-03

By: \_\_\_\_\_

Name: B. Lynne Parshall  
Title: Executive Vice President

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**STATEMENT UNDER 37 CFR 3.73(b)**

Applicant, **ISIS Pharmaceuticals, Inc.**, a corporation, states that it is:

☒ the assignee of the entire right, title, and interest of the applications identified in Table A attached hereto.

The extent (by, percentage) of its ownership interest is **100%** in the patent applications identified in Table A by virtue of:

☒ a copy of the pertinent assignment from the inventor(s) of the patent applications identified in Table A is enclosed herewith.

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Respectfully submitted,  
**ISIS PHARMACEUTICALS, INC.**

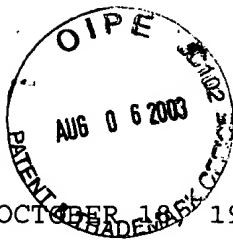
Date: 5-30-03

By: \_\_\_\_\_

Name: **B. Lynne Parshall**  
Title: **Executive Vice President**

TABLE A

SERIAL NO.	FILING DATE	INVENTORS	EXAMINER	ART UNIT	TITLE
09/546,596	April 10, 2000	Cook, Manoharan, Bennett	J.N. Fredman	1637	Compositions and Methods for Enhanced Biostability and Altered Biodistribution of Oligonucleotides in Mammals
09/902,953	July 11, 2001	Krolz, Mehta	J.Schulz	1635	Enhancement of the Stability of Oligonucleotides Comprising Phosphorothioate Linkages by addition of Water-Soluble Antioxidants
09/944,493	August 22, 2001	Weinbach, Tillman, Geary, Hardee	Not Yet Determine	1615	Pulsatile Release Compositions and Methods for Enhanced Intestinal Drug Absorption
09/935,316	August 22, 2002	Teng, Weinbach, Tillman, Geary, Hardee	Not yet determined	1632	Bioadhesive Compositions and Methods for Enhanced Intestinal Drug Absorption
10/029,598	December 21, 2001	Teng, Cook, Tillman, Hardee, Ecker, Manoharan	J. Epps	1635	Compositions and Methods for Non-Parenteral Delivery of Oligonucleotides
09/315,294	May 20, 1999	Mehta, Hardee, Cook, Ecker, Tsai, and Templin	M. Schmidt	1635	Compositions and Methods for Topical Delivery of Oligonucleotides
09/315,298	May 20, 1999	Teng, Cook, Tillman, Hardee, Ecker and Manoharan	J. Epps	1635	Compositions and Methods for Non-Parenteral Delivery of Oligonucleotides
09/108,673	July 1, 1998	Teng, and Hardee	W. Sandals	1636	Compositions and Methods for the Delivery of Oligonucleotides via the Alimentary Canal



JWC/JH/MPS  
dh  
UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

OCTOBER 1999

PTAS

WOODCOCK WASHBURN KURTZ ET AL  
MICHAEL P. STRAHER, ESQ.  
ONE LIBERTY PLACE - 46TH FLOOR  
1650 MARKET STREET  
PHILADELPHIA, PENNSYLVANIA 19103-7301



\*101121713A\*

ISIS-3510

RECEIVED

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

OCT 27 1999

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

Woodcock Washburn Kurtz  
Mackiewicz & Norris LLP

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 08/16/1999

REEL/FRAME: 010166/0588  
NUMBER OF PAGES: 9

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

TENG, CHING-LEOU

DOC DATE: 06/23/1999

ASSIGNOR:

COOK, PHILLIP DAN

DOC DATE: 06/29/1999

ASSIGNOR:

TILLMAN, LLOYD

DOC DATE: 06/24/1999

ASSIGNOR:

HARDEE, GREGORY E.

DOC DATE: 06/23/1999

ASSIGNOR:

ECKER, DAVID J.

DOC DATE: 06/29/1999

ASSIGNOR:

MANOHARAN, MUTHIAH

DOC DATE: 06/25/1999

COPY SENT TO CLIENT

CN 11-22-99

010166/0588 PAGE 2

ASSIGNEE:

ISIS PHARMACEUTICALS, INC.  
2292 FARADAY AVENUE  
CARLSBAD, CALIFORNIA 92008

SERIAL NUMBER: 09315298  
PATENT NUMBER:

FILING DATE: 05/20/1999  
ISSUE DATE:

LAWAN FLETCHER, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

08-19-1999

To The Honorable Commissioner of P  
thereof.

101121713

the attached original documents or copy

## 1. Name of conveying party(ies):

Ching-Leou Teng, Phillip Dan Cook, Lloyd Tillman,  
Gregory E. Hardee, David J. Ecker and Muthiah  
ManoharanAdditional name(s) of conveying party(ies)  
attached? ( ) YES (X) NO

## 3. Nature of Conveyance:

- (X) Assignment ( ) Merger  
( ) Security Agreement  
( ) Change of Name  
( ) Other:

Execution Date(s): June 23, June 29, June 24, June 23,  
June 29, and June 25, 1999

## 2. Name and address of receiving party(ies):

Name: ISIS Pharmaceuticals, Inc.

Street Address: 2292 Faraday Avenue

City: Carlsbad

State California ZIP 92008

Additional name(s) &amp; address attached? ( ) YES (X) NO

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No.(s)

09/315,298 filed 5/20/99

B. Patent No.(s)

Additional numbers attached? ( ) YES (X) NO

5. Name and address of party to whom correspondence  
concerning documents should be mailed:Name: Michael P. Straher, Esq.  
Internal Address: WOODCOCK WASHBURN KURTZ  
MACKIEWICZ & NORRIS LLP  
One Liberty Place - 46th Floor  
Philadelphia, Pennsylvania 19103-7301Street Address: WOODCOCK WASHBURN KURTZ  
MACKIEWICZ & NORRIS LLP  
One Liberty Place - 46th Floor  
1650 Market Street  
Philadelphia, Pennsylvania 19103-7301

## 6. Total number of applications and patents involved:

One (1)

## 7. Total fee (37 CFR 3.41):.....\$40.00

- (X) Enclosed  
( ) Authorized to be charged to Deposit Account  
Number 23-3050

8. Please charge any deficiency or credit any  
overpayment to Deposit Account Number 23-3050

DO NOT USE THIS SPACE

## 9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true  
copy of the original document.*

Michael P. Straher/ 38,325

Name of Person Signing/Reg. No.

Signature

Date

Total number of pages including cover sheet, attachments, and document: 9

Mail documents to be recorded with required cover sheet information to:

08/19/1999 MTHAI1 00000046 09315298

FC:581

40.00 OP

Commissi ner of Patents and Trademarks  
Box Assignments  
Washington, D.C. 20231

## A S S I G N M E N T

WHEREAS, We, Ching-Leou Teng, of San Diego, State of California, Phillip Dan Cook, of ~~Lake San Marcos~~ <sup>FAIRBROOK</sup>, State of California, Lloyd Tillman, of Carlsbad, State of California, Gregory E. Hardee, of Rancho Sante Fe, State of California, David J. Ecker, of Encinitas, State of California, and Muthiah Manoharan, of Carlsbad, State of California, have invented a certain invention entitled **COMPOSITIONS AND METHODS FOR NON-PARENTERAL DELIVERY OF OLIGONUCLEOTIDES**, for which we have made application for Letters Patent of the United States, said application having been filed May 20, 1999 and assigned Application No. 09/315,298; and

WHEREAS, ISIS Pharmaceuticals, Inc. hereinafter referred to as the assignee, of 2292 Faraday Avenue, Carlsbad CA, a corporation of Delaware, is desirous of acquiring the entire right, title and interest in and to the said inventions or improvements and in and to the said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in any and all countries:

NOW, THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) to each of us in hand paid by said assignee, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said assignors, have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over to said assignee, the entire right, title and interest in and to said inventions or improvements and said application and any and all continuations, divisions and renewals of and substitutes for said application, and in, to and under any and all Letters Patent which may be granted on or as a result thereof in the United States and any and all other countries, and any reissue or reissues or extension or extensions of said Letters Patent, and assign to and authorize said assignee, to file in our names applications for Letters Patent in all countries, the same to be held and enjoyed by said assignee, its successors, assigns, nominees or legal

representatives, to the full end of the term or terms for which said Letters Patent respectively may be granted, reissued or extended, as fully and entirely as the same would have been held and enjoyed by us had this assignment, sale and transfer not been made.

AND we hereby covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement in conflict herewith, and we further covenant and agree that we will each time request is made and without undue delay, execute and deliver all such papers as may be necessary or desirable to perfect the title to said inventions or improvements, said application and said Letters Patent to said assignee, its successors, assigns, nominees, or legal representatives, and each of us agrees to communicate to said assignee or to its nominee all known facts respecting said inventions or improvements, said application and said Letters Patent, to testify in any legal proceedings, to sign all lawful papers to execute all disclaimers and divisional, continuing, reissue and foreign applications, to make all rightful oaths, and generally to do everything possible to aid said assignee, its successors, assigns, nominees and legal representatives to obtain and enforce for its or their own benefit proper patent protection for said inventions or improvements in any and all countries.

AND we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States whose duty it is to issue patents on applications as aforesaid, to issue to said assignee, as assignee of the entire right, title and interest, any and all Letters Patent for said inventions or improvements, including any and all Letters Patent of the United States which may be issued and granted on or as a result of the application aforesaid, in accordance with the terms of this assignment.



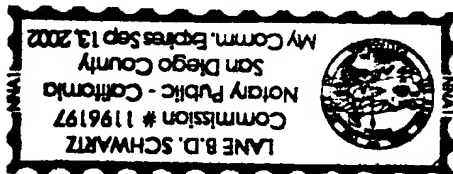
IN WITNESS WHEREOF, we have hereunto set our hands and seals.

Dated: June 23, 1999

Ching-Leou Teng  
CHING-LEOU TENG

State of California            )  
  )       ss.  
County of San Diego         )

On this 23rd day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **CHING-LEOU TENG** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.

Lane B.D. Schwartz  
Signature of Notary

Dated: 6/22/99, 1999

Phillip Dan Cook  
PHILLIP DAN COOK

State of California )  
 )  
County of San Diego ) ss.

On this 29th day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **PHILLIP DAN COOK** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that ~~he~~/she executed the same in ~~his~~/her authorized capacity, and that by ~~his~~/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.

Lane B.D. Schwartz  
Signature of Notary

Dated: June 24, 1999Lloyd Tillman  
LLOYD TILLMANState of California )  
 )  
County of San Diego ) ss.

On this 24<sup>th</sup> day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **LLOYD TILLMAN** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.

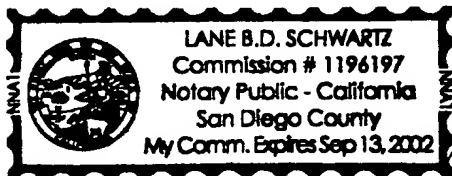
Lane B.D. Schwartz  
Signature of Notary

Dated: 6/23, 1999

GREGORY E. HARDEE  
GREGORY E. HARDEE

State of California )  
 )  
County of San Diego ) ss.

On this 23<sup>rd</sup> day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **GREGORY E. HARDEE** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that ~~he~~/she executed the same in ~~his~~/her authorized capacity, and that by ~~his~~/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.



WITNESS my hand and official seal.

Lane B.D. Schwartz  
Signature of Notary

Dated: 6/29/99, 1999

David J. Ecker  
DAVID J. ECKER

State of California                    )  
  )  
County of San Diego                 )                   ss.

On this 29<sup>th</sup> day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **DAVID J. ECKER** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that ~~he~~/she executed the same in ~~his~~/her authorized capacity, and that by ~~his~~/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.

**WITNESS** my hand and official seal.

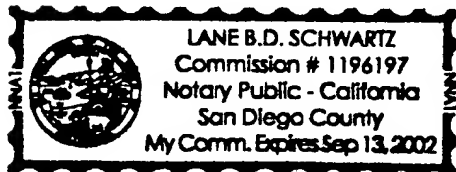


Signature of Notary

Dated: June 25, 1999Muthiah Manoharan  
MUTHIAH MANOHARANState of California           )  
  )  
County of San Diego        )       ss.

On this 25<sup>th</sup> day of June, 1999, before me, the undersigned, a Notary Public for the state, personally appeared **MUTHIAH MANOHARAN** personally known to me/~~proved to me on the basis of satisfactory evidence~~ to be the person who subscribed the foregoing Assignment and acknowledged to me that ~~he~~/she executed the same in ~~his~~/her authorized capacity, and that by ~~his~~/her signature on the Assignment the person, or the entity on behalf of which the person acted, executed the Assignment.

WITNESS my hand and official seal.

Lane B.D. Schwartz  
Signature of Notary